
Struck By/Caught Between

Presented by: ETTA, OSH Division, (919) 807-2875



Cherie Berry, Commissioner of Labor

This presentation was created by the N.C. Department of Labor for safety and health training.

Objectives

- After this course, students will be able to:
 - Recognize potential struck-by/caught-in or between situations
 - Identify struck-by/caught-in or between hazards
 - Evaluate control measures for struck-by/caught-in or between hazards

Definitions

1926.32(f)

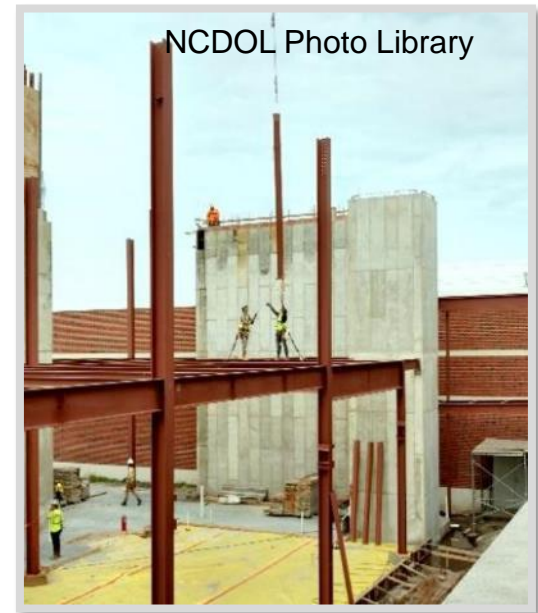
- **Competent person**

- “One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them“



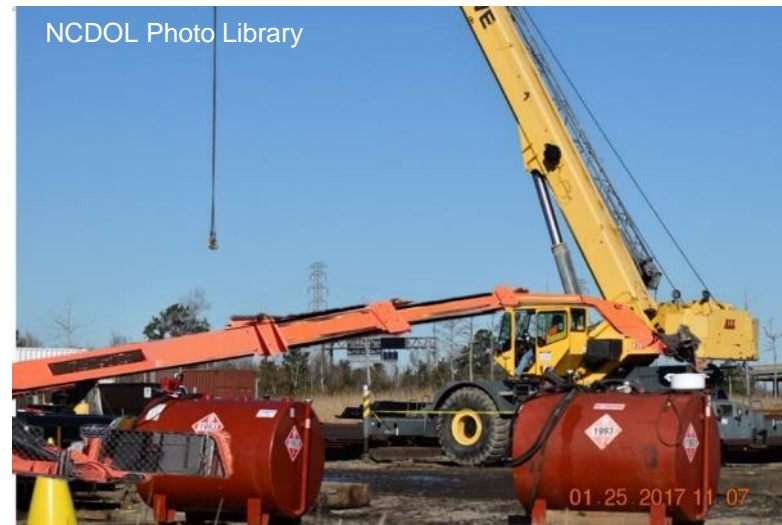
Struck-By Hazards

- Struck-by injuries are produced by forcible contact or impact between the injured person and an object or piece of equipment
- Struck-by hazards are categorized as follows:
 - Struck-by flying object
 - Struck-by falling object
 - Struck-by swinging object
 - Struck-by rolling object



Struck-By Hazards

- Struck-by examples:
 - Tractor trailer, truck or vehicle
 - A counterweight from piece of equipment
 - Falling tree, tree top or limbs/branches
 - Precast walls
 - Building materials
 - Motor graders
 - Fly wheels
 - Man-lifts
 - Forklifts



Caught-In or Between Hazards

- Hazards causing a person to be squeezed, **caught**, crushed, pinched, or compressed **between** two or more objects, or **between** parts of an object



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Caught-In or Between Hazards

- Caught-in or between examples:
 - Between a wall and tractor trailer
 - Caught in/between truck tire and pavement
 - Caught in/between dock leveler
 - Caught in wood chipper

Struck By/Caught Between Causes

- Most of these are a direct result of:
 - Construction equipment
 - Motor vehicles
 - Materials handling, storage, use, and disposal
 - Tools and equipment
 - Falling trees
 - Wood chipper

Highway cones



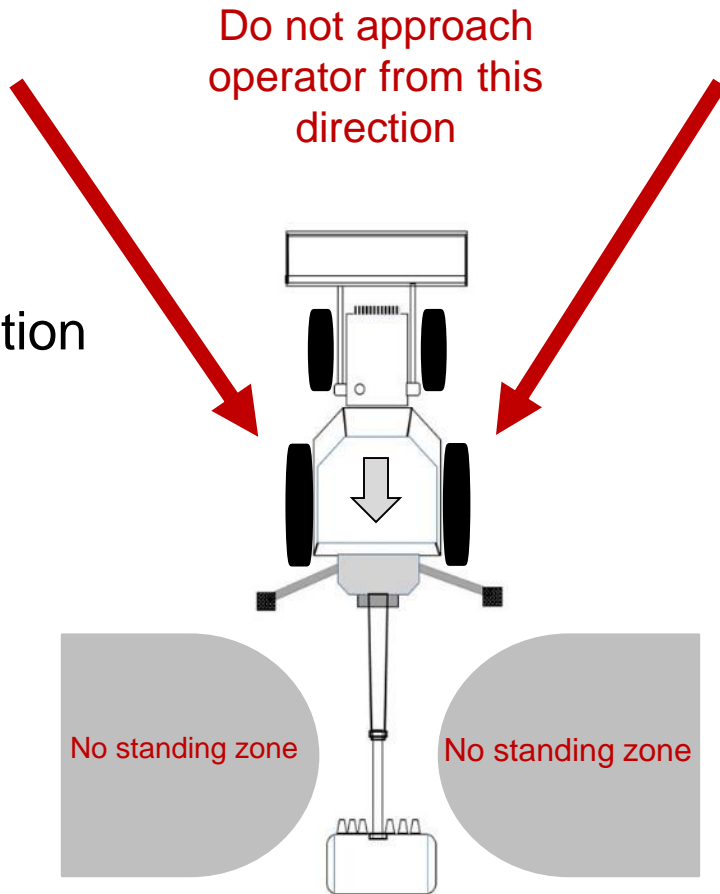
Construction Equipment

- What are the hazards with construction equipment?
 - Worker crushed by a compactor/roller
 - » Highway construction area/site, when it backed over him
 - Operator of a backhoe installing sewer lines
 - » Bucket struck an adjacent tree which was rotten, causing the tree to fall, striking another worker in the head that was standing in a 2 foot deep trench



Construction Equipment

- No visibility zone:
 - Backhoe loader
 - » Educate workers how to approach **all construction equipment** while in operation



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Construction Equipment

- Safety issues:
 - Overhead hazards
 - Low visibility



Construction Equipment

- Safe work practices:
 - Roll-over protective structures - “ROPS”
 - Seatbelts



Construction Equipment

1926.602(a)(2)

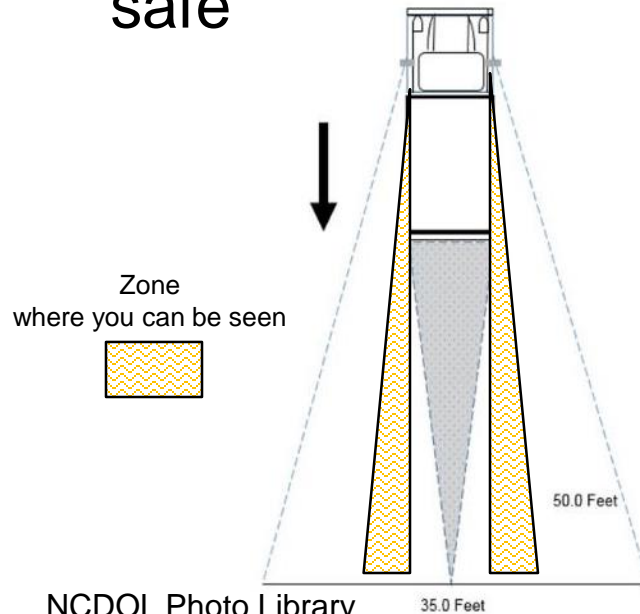
- Rollover protective structures:
 - Employers are responsible for requiring the wearing of appropriate personal protective equipment
 - » Failure to use “seat belts” is citable under 1926.28(a)



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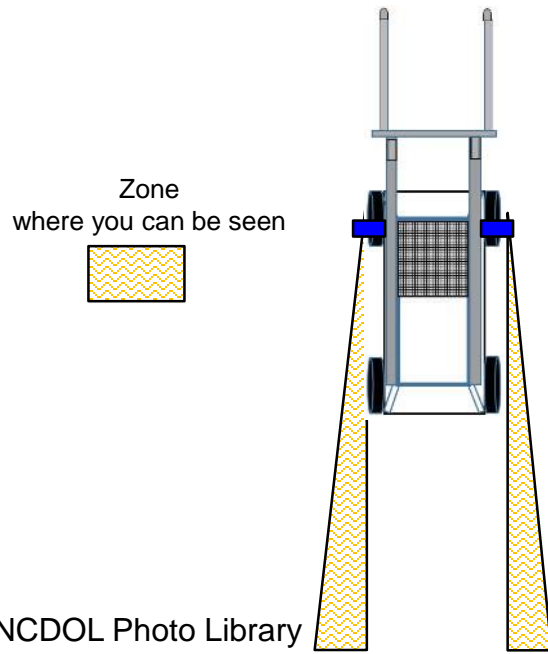
Construction Equipment

- No visibility zone:
 - Do not drive a vehicle in reverse gear with an obstructed rear view, unless it has an audible reverse alarm, or another worker signals that it is safe



Construction Equipment

- No visibility zone:
 - Do not drive equipment in reverse gear with an obstructed rear view, unless it has an audible reverse alarm, or another worker signals that it is safe



Construction Equipment

- Hazard issues:

- Workers struck and run over by moving vehicles and equipment
- Workers struck by automobiles while in work zones
- Vehicles/equipment operated in reverse gear with obstructed rear view
 - » Remember, spotters themselves can be at risk for injury or even death



Motor Vehicles

- Safe work practices:
 - When vehicle safety practices are not observed, there is a risk of being struck by oncoming vehicles
 - » Garbage truck is driving down the wrong side of the street



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Motor Vehicles

- Hazard issues:
 - Use traffic signs, barricades or flaggers when construction takes place near public roadways
 - » Workers must be highly visible at all times, day or night
 - » Safety apparel, such as red or orange vests, are required
 - If worn for night work, must be of reflective material



Motor Vehicles

- Safe work practices:
 - When vehicle safety practices are not observed, there is a risk of being struck by vehicles



Motor Vehicles

- Safe work practices:
 - Provide an area of separation between traffic flow and work area



Motor Vehicles

- Safe work practices:
 - Equipment being operated near traffic must be protected by adequate buffer space



Motor Vehicles

- Personal protective equipment:
 - All workers exposed to the risks of moving roadway traffic or construction equipment should wear high-visibility safety apparel



Motor Vehicles

- What are the safety issues?



Materials Handling and Storage

- Worker was standing on the main floor of a one-story single family residence
 - Several trusses collapsed falling onto the worker
- Worker was trying to move a vertically stacked pile of 16 pieces of 12' by 4' drywall
 - Drywall shifted pinning him between the stack of drywall and the door jam



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Materials Handling and Storage

- Safety issues:
 - Improperly stored materials
 - Incorrectly cutting ties or other securing devices
 - Improper loading and unloading



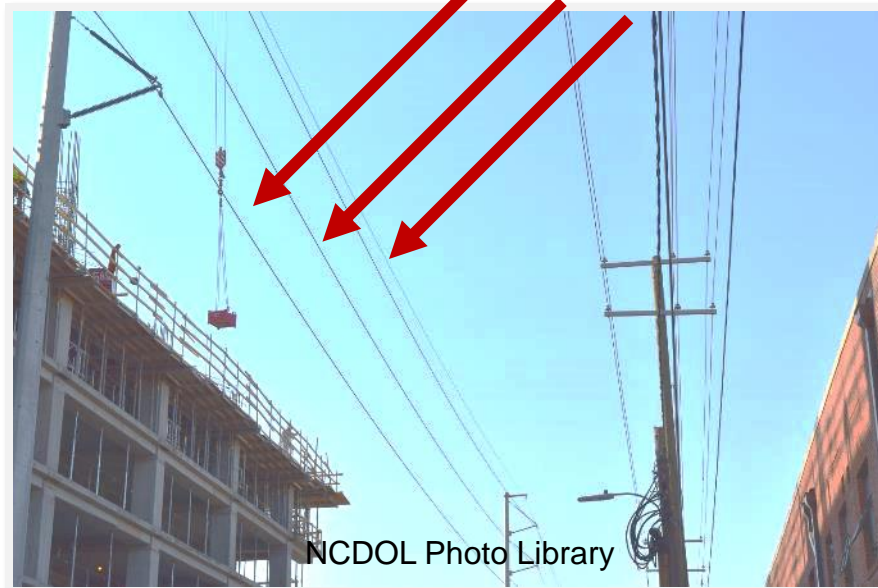
Materials Handling and Storage

- Safety issues:
 - Improperly stored materials
 - Incorrectly cutting ties or other securing devices
 - Improper loading and unloading



Materials Handling and Storage

- What safety issues do you see?
 - Electrical safety
 - Falling object protection



Materials Handling and Storage

- What are the safety issues?
 - Housekeeping

Nails standing up on the boards



Materials Handling and Storage

- Rigging safety issues:
 - Using defective rigging equipment
 - Excessive loading



Materials Handling and Storage

- What are the rigging safety issues?
 - Qualified rigger



Materials Handling and Storage

- Rigging safe work practices:
 - Load should not exceed rated capacity
 - Protect sling from sharp corners
 - Know center of gravity of load



Materials Handling and Storage

- Rigging safe work practices:
 - Inspect the rigging
 - Keep personnel clear
 - Never leave load unattended
 - Wear hardhats when lifting



Tools and Equipment

- Safety issues:
 - Improper work procedures
 - » Machine guards
 - Use of defective equipment



Always adjust the
guard for material
being cut

Band-saw -
Workers were leaving this
door open



Tools and Equipment

- What are the safety issues?

Portable hand grinder -
hazards

1926.303(c)(6)



Jack with
no rated capacity

1926.303(a)(1)

Jack stands supporting
forklift carriage

1926.305(d)(1)(i)



Tools and Equipment

- What are the safety issues?



Falling Trees

- What are the hazards?
 - Trees
 - Falling branches



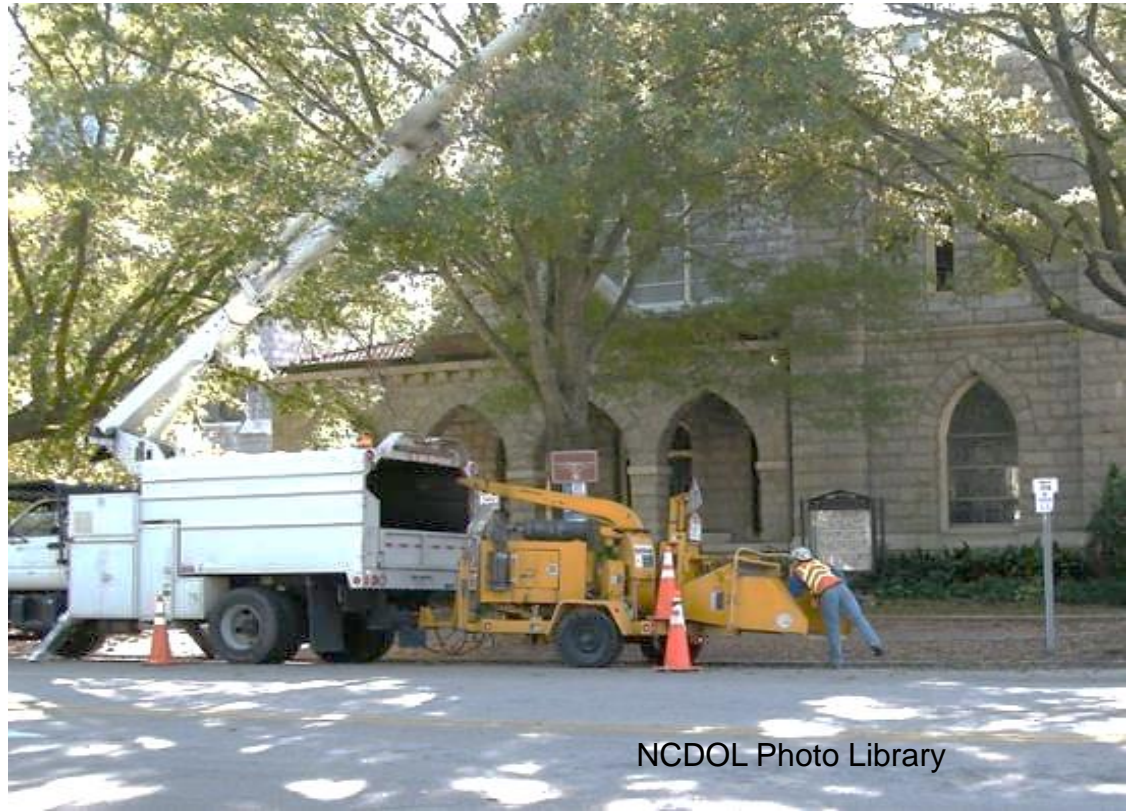
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Wood Chippers

- What are the hazards?



Preventing Struck By/Caught Between Injuries

- **Comprehensive Safety Program**

- Development, implementation, and enforcement of program for workers
 - » Includes training in the recognition and avoidance of unsafe work conditions and instruction in safe work practices
 - If a multilingual workforce, instruction should be in the language understood by the worker
 - » Ensures appropriate PPE and usage



Summary

- In this course, we discussed:
 - Potential struck by/caught-in or between situations
 - Identification of struck by/caught-in or between hazards
 - Evaluating and controlling struck by/caught-in or between hazards

Thank You For Attending!

Final Questions?